ROSA ROBOTICS





Robotic surgical systems are an integral piece of creating a comprehensive view of orthopedic care informed by data.



Adoption of robotic technology is increasing, and it's estimated that robotically assisted procedures will make up 40% of all total knee arthroplasties performed in the U.S. by the middle of this decade.¹



In a 2016 global survey accessing public perceptions about robotic-assisted surgery, 72% of respondents indicated robotic-assisted surgery was safer, faster and less painful or offered better results than minimally invasive conventional surgery.²

REVOLUTIONIZING THE STANDARD OF CARE

ROSA[®] Robotics is a multi-application platform that works with you, not for you.

Utilizing Zimmer Biomet's leading implants and data technologies, ROSA Robotics **redefines robotics** by providing **real-time insights** with the goal to **optimize outcomes** and **revolutionize the standard of care.**



Surgeon-Centered

Our robotics system works with you, so you can focus on achieving optimal outcomes for your patients.



Accurate³⁻⁶

What was previously accomplished through well-trained feel is now objectively measured. Through robotic guidance, components are accurately positioned.³⁻⁶



Efficient⁷⁻¹¹

With the ability to perform multiple procedures on a single robot, our applications seamlessly integrate into your existing workflow, providing greater flexibility, confidence and efficiency.⁷⁻¹¹



Data-Driven¹²

Making the best decision when it matters requires data-driven intelligence. ROSA Robotics, a cornerstone of ZBEdge[™] Dynamic Intelligence[™], is an integral part of creating a comprehensive view of orthopedic care informed by data.

That's our robotics promise.

ROSA[®] Knee – Predictive Planning, Precise Performance

Designed by surgeons for surgeons, ROSA Knee provides objective soft tissue feedback and accurate bone resections,^{3,4} which aim to restore a patient's natural knee.

ROSA Knee collects intra-operative metrics to inform your decision-making and provide data-driven insights so you can focus on achieving the optimal outcome for each patient.

• **Highly accurate:** Produces more accurate and more reproducible bone resections than conventional instrumentation^{3,4}

Improved early outcomes:

Post-operative recovery was faster with ROSA Knee compared to conventional and navigated TKA¹³⁻¹⁷

• Increase confidence: Easy to integrate with a minimal learning curve^{10,11}





ROSA[®] Hip – Precisely Personalized

A personalized robotic system that enables direct anterior surgeons to evaluate and execute a surgical plan based on real-time feedback and the patient's unique anatomy. It provides surgeons with reassurance and control, while seamlessly integrating into their workflow.

Learn More

• **Highly accurate:** Acetabular component positioning has been shown to be more accurate and reproducible than conventional instrumentation^{5,6}

• Efficient:

- ONE Matrix[™] Hip, our Trial panel, provides a table to evaluate the best possible implant combination in terms of leg length and offset for each patient
- Adoption is associated with a learning curve of 12 cases⁹

• Intuitive Planning:

Use ONE Planner[®] Hip, our web-based surgical software, to plan a hip replacement case



ZBEdge[™]

DYNAMIC INTELLIGENCE[™]

From a clinically proven implant leader to an emerging technology solutions provider, we are reshaping the future of orthopedic care with cutting-edge robotic and digital technology... meet ZBEdge Dynamic Intelligence.

Meaningful Connections to Unlock Insights

ROSA Robotics is a cornerstone of ZBEdge Dynamic Intelligence, with the power to elevate and unlock the full potential of Zimmer Biomet's cutting-edge suite of integrated digital technologies, robotics and implant solutions.



From pre-op to post-op, ZBEdge technologies enable:

- **SMARTER**^{8,12} decision-making with a goal to improve outcomes
- **FASTER⁷⁻¹⁰** and more efficient care
- **BETTER** value^{18,19} and experiences^{20,21}

Compared to today's standard of care.



Trusted implants powered by ZBEdge

ZBEdge technology accurately plans^{7,8} and places^{4,6} implants, and then measures recovery^{22,23} and gait metrics.²⁴

Persona IQ: The objective kinematic data generated by the CTE with CHIRP System are not intended to support clinical decisionmaking and have not been shown to provide any clinical benefit.







DATA PRIVACY

AT ZIMMER BIOMET, THE PATIENT IS ALWAYS THE PATIENT, AND NEVER THE PRODUCT.

We accept the responsibility that comes along with the new age of data transformation and we are committed to protecting your privacy.

Our dedicated teams of privacy professionals work to support Zimmer Biomet's data protection obligations, data management and use.

References

1. 2021 Zimmer Biomet Market Model.

- Boys, J. A., Alicuben, E. T., DeMeester, M. J., Worrell, S. G., Oh, D. S., Hagen, J. A., & DeMeester, S. R. (2016). Public perceptions on robotic surgery, hospitals with robots, and surgeons that use them. Surgical endoscopy, 30(4), 1310–1316. 2016. https://doi.org/10.1007/s00464-015-4368-6.
- Seidenstein A, Birmingham M, Foran J, Ogden S., Better accuracy and reproducibility of a new robotically assisted system for total knee arthroplasty compared to conventional instrumentation: a cadaveric study. Knee Surg Sports Traumatol Arthrosc. 2020 Mar;29(3):859-866. doi: 10.1007/s00167-020-06038-w. Epub 2020 May 24. PMID: 32448945.
- Rossi SMP, Sangaletti R, Perticarini L, Terragnoli F, Benazzo F. High accuracy of a new robotically assisted technique for total knee arthroplasty: an in vivo study. Knee Surg Sports Traumatol Arthrosc. 2022 Jan 4:1–9. doi: 10.1007/ s00167-021-06800-8. Epub ahead of print. PMID: 34981162; PMCID: PMC8723813.
- Kamath, Atul, F., Sridhar M. Durbhakula, Trevor Pickering, Nathan L. Caferky, Trevor G. Murray, Michael A. Wind Jr., Stéphane Méthot*. Improved accuracy and fewer outliers with a novel CT-free robotic THA system in matched-pair analysis with manual THA. Journal of Robotic Surgery. Published online: 28 October 2021.
- 6. Buchan, G.B.J., et al., Improved accuracy of a novel fluoroscopy-based robotically assisted THA system compared to manual THA. Journal of Robotic Surgery, 2023.
- 7. Klag EA, Lizzio VA, Charters MA, et al. Increased Accuracy in Templating for Total Knee Arthroplasty Using 3D Models Generated from Radiographs. J Knee Surg. 2022
- Masse V, Ghate RS. Using standard X-ray images to create 3D digital bone models and patient-matched guides for aiding implant positioning and sizing in total knee arthroplasty. Comput Assist Surg (Abingdon). 2021;26(1):31-40.
- 9. Buchan, G.B.J., et al., The learning curve for a novel, fluoroscopy-based robotic-assisted total hip arthroplasty system. Int J Med Robot, 2023: p. e2518.
- Bolam, S.M., et al., Introduction of ROSA robotic-arm system for total knee arthroplasty is associated with a minimal learning curve for operative time. Journal of Experimental Orthopaedics, 2022. 9(1): p. 86.
- 11. Vanlommel, L., et al., The initial learning curve for the ROSA(R) Knee System can be achieved in 6-11 cases for operative time and has similar 90-day complication rates with improved implant alignment compared to manual instrumentation in total knee arthroplasty. J Exp Orthop, 2021. 8(1): p. 119.
- Lonner, J.H., Anderson, M.B., Redfern, R.E. et al. An Orthopaedic Intelligence Application Successfully Integrates Data from a Smartphone-based Care Management Platform and a Robotic Knee System Using a Commercial Database. International Orthopaedics (SICOT) (2022).
- 13. Batailler, C., et al., Is sequential bilateral robotic total knee arthroplasty a safe procedure? A matched comparative pilot study. Arch Orthop Trauma Surg, 2022
- 14. Parratte, S., et al., An anatomo-functional implant positioning technique with robotic assistance for primary TKA allows the restoration of the native knee alignment and a natural functional ligament pattern, with a faster recovery at 6 months compared to an adjusted mechanical technique. Knee Surg Sports Traumatol Arthrosc, 2022.
- 15. Mancino, F., et al., A new robotically assisted technique can improve outcomes of total knee arthroplasty comparing to an imageless navigation system. Arch Orthop Trauma Surg, 2022.
- 16. Fary, C., et al., EARLIER GAINS IN ACTIVE RANGE OF MOTION FOLLOWING ROBOTIC-ASSISTED TOTAL KNEE ARTHROPLASTY COMPARED WITH CONVENTIONAL INSTRUMENTATION. Orthopaedic Proceedings, 2023. 105-B(SUPP_2): p. 43-43.
- 17. Kenanidis, E., et al., Comparative outcomes between a new robotically assisted and a manual technique for total knee arthroplasty in patients with osteoarthritis: a prospective matched comparative cohort study. European Journal of Orthopaedic Surgery & Traumatology, 2022.
- 18. Crawford, David et al. 2021 Mark Coventry Award: Use of a smartphone-based care platform after primary partial and total knee arthroplasty: a prospective randomized controlled trial. Bone Joint J 2021;103-B(6 Supple A):3-12.
- 19. Crawford, David et al. Early outcomes of primary total hip arthroplasty with use of a smartphone-based care platform: a prospective randomized controlled trial. Bone Joint J 2021;103-B(7 Supple B):91-97.
- Haffar A, Krueger CA, Goh GS, Lonner JH. Total Knee Arthroplasty With Robotic Surgical Assistance Results in Less Physician Stress and Strain Than Conventional Methods. 2022 Jun;37(6S):S193-S200.
- 21. mymobility Clinical Study Preliminary Data. Patients completing survey through 08/04/2020. Questions answered between 14 and 44 days post op. Study ongoing.
- 22. M. Anderson*, D. Van Andel, C.L. Israelite, C. Nelson. The Recovery Curve for Physical Activity Following Primary Knee Arthroplasty Using Passively Collected Objective Measures with a Smart-phone Based Care Platform and Smart Watch. Orthopaedic Proceedings Vol. 103-B, No. SUPP_9, Published online 15 June 2021.+
- M. Anderson*, D. Van Andel, J. Foran, I. Mance, E. Arnold. Feasibility of Passively Collected Gait Parameters Using a Smart-Phone Based Care Platform Following Total Hip and Knee Arthroplasty. Orthopaedic Proceedings Vol. 103-B, No. SUPP_9, Published online 15 June 2021.+
- 24. Yergler, Jeffrey, et al. Smart Knee Prosthesis Enables Remote Monitoring of Walking Speed Following Total Knee Arthroplasty: The Digital Health Revolution. Poster 88. American Academy of Hip and Knee Surgeons 2022 Annual Meeting.

*A Zimmer Biomet Employee

+ Funded, in part, by Zimmer Biomet

Legal Manufacturer ROSA Knee Zimmer CAS 75 Queen Street Suite 3300 Montreal (Quebec) H3C 2N6 Canada Tel +1.866.3D.ORTHO or +1.514.396.5422

Legal Manufacturer

ROSA Hip Zimmer CAS 75 Queen Street Suite 3300 Montreal (Quebec) H3C 2N6 Canada Tel +1.866.3D.ORTHO or +1.514.396.5422

Legal Manufacturer

ONE Planner Hip Zimmer CAS 75 Queen Street Suite 3300 Montreal (Quebec) H3C 2N6 Canada Tel +1.866.3D.ORTHO or +1.514.396.5422

Legal Manufacturer

Persona The Personalized Knee Zimmer, Inc. 1800 West Center St. Warsaw, Indiana 46581-0587 USA

All content herein is protected by copyright, trademarks and other intellectual property rights, as applicable, owned by or licensed to Zimmer Biomet or its affiliates unless otherwise indicated, and must not be redistributed, duplicated or disclosed, in whole or in part, without the express written consent of Zimmer Biomet.

This material is intended for healthcare professionals. Distribution to any other recipient is prohibited.

For indications, contraindications, warnings, precautions, potential adverse effects and patient counselling information, see the package insert or contact your local representative; visit http://www.zimmerbiomet.com for additional product information.

Check for country product clearances and reference product specific instructions for use.

Not for distribution in France.

Microsoft and HoloLens are trademarks of the Microsoft Corporation.

Patients must have internet access and a text-capable mobile device or a compatible smartphone to use mymobility; not all smartphone app features are available with web-based version. Not all patients are candidates for mymobility and patients should be evaluated by surgeons as appropriate candidates for therapy at home.

©2023 Zimmer Biomet



3385.1-GLBL-en-Issue Date-2023-09

Legal Manufacturer

Canary Medical USA LLC 2710 Loker Ave. West, Suite 350 Carlsbad, CA 92010 Customer Support: 1-833-692-2627 canarymedical.com

Exclusive Distributor

Zimmer, Inc. 1800 West Center Street Warsaw, Indiana 46581-0587 USA zimmerbiomet.com